

Household and Domestic Science: Entangling the Personal and the Professional

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This article focuses on how a BSc (Household and Social Science) from Kings College of Household and Social Science (KCHSS) inflected the life and work of Winifred Egan (1915-2007), a teacher, whose career spanned elementary and secondary schooling and teacher education. The article illustrates the ways in which KCHSS graduates deployed disciplinary knowledge around the developing science of nutrition not only in newly-opening spaces of laboratories but also in women's customary spaces of school teaching. The article also demonstrates how the focus on science fostered at KCHSS and the technical proficiency in craft skills that characterised much domestic subjects teaching were re-balanced in differing teaching contexts.

Keywords: science, technical, nutrition, elementary, secondary

Introduction

Winifred Egan's testimonial in 1961 from the headmistress of Wellington Secondary (Modern) School for Girls in Cheshire, England, states that Winifred was 'a capable teacher ... who ... closely linked the teaching of Housecraft with Science'.² This situates Winifred (1915-2007) within a tradition of domestic subjects teaching that had been the focus of claims and counter claims during the nineteenth and twentieth centuries about what constituted an appropriate 'domestic' and

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² Testimonial from J.Mellor, Head Mistress, The Wellington Secondary School for Girls, 14 February 1961.

'scientific' education for women and girls.³ During the early twentieth century, issues around the 'domestic' and 'scientific' education for girls were aired both within the school science movement and by the feminist movement.⁴ These debates also resonated with the development of household science for women, epitomised by the foundation in London in 1928 of Kings College for Household and Social Science (KCHSS), from which Winifred graduated BSc (Household and Social Science) in 1936.

³ See Catherine Manthorpe, 'Science or Domestic Science? The Struggle to Define an Appropriate Science Education for Girls in Early Twentieth-century England', *History of Education* 15, no.3 (1986): 195-213; Carol Dyhouse, *Girls Growing Up in Late Victorian and Edwardian Britain*, London, Routledge, 1981); idem, 'Social Darwinistic Ideas and the Development of Women's Education in England, 1880–1920. *History of Education* 5, no.1 (1976): 41-58.

⁴ See, for example, the British Association for the Advancement of Science, where Arthur Smithells, professor of chemistry at the University of Leeds, believed that school science for both girls and boys needed to be based on objects familiar to children (Frank A.J.L.James, 'Smithells Arthur (1860-1939)', *Oxford Dictionary of National Biography* [<http://www.oxforddnb.com/view/article/36170>, accessed 9 Aug 2016]). Smithells thought that domestic science could reform science teaching for girls at the same time as placing domestic economy on a solid scientific foundation (A. Smithells 'School Training For the Home Duties of Women', *Annual Report of the British Association for the Advancement of Science* (1906), 78, quoted in A.J.Flintham, 'The Contribution of Arthur Smithells, F.R.S. to Science Education', *History of Education* 6, no.3 (1977): 195-208. Blakestad argues that this was based in his wish to stimulate girls' interest in science within a broader view that science should draw on aspects familiar to children, rather than the result of a desire on Smithells' part to advocate separate (and inferior) standards of science for girls (Nancy L. Blakestad, *King's College of Household and Social Science and the Household Science Movement in English Higher Education c.1908-1939*, Unpublished PhD Thesis, University of Oxford (1994), 94 (hereafter *KCHSS*)).

Carol Dyhouse⁵, Felicity Hunt,⁶ Catherine Manthorpe,⁷ and Annemarie Turnbull⁸ all highlight feminist critiques of the household science movement expressed in views like those of Ida Freund, chemistry lecturer at Newnham College, Cambridge,⁹ who argued that household science would undermine the cause of equality for women in higher education by teaching a feminised curriculum that would divert girls from careers as academic scientists.¹⁰ Blakestad argues that in challenging the marginalisation of women in mainstream historical interpretations, historians of women's education have framed discussion of domestic science and household science within a whiggish struggle for educational equality with men, coloured by a feminist critique of housework in which the 'domestic' was viewed as intrinsically oppressive and stultifying for women.¹¹ Recent research in

⁵ Carol Dyhouse, 'Towards a 'Feminine' Curriculum for English Schoolgirls: The Demands of Ideology 1870–1963', *Women's Studies International Forum*, 1, no.4 (1978): 297-311; idem, *Girls Growing Up*.

⁶ Felicity Hunt, 'Divided Aims: The Educational Implications of Opposing Ideologies in Girls' Secondary Schooling, 1850-1940', in *Lessons for Life: The Schooling of Girls and Women, 1850-1950*, ed. Felicity Hunt (Oxford: Blackwell, 1987), 3-21.

⁷ Felicity Hunt, *Gender and Policy in English Education: Schooling for Girls, 1902-44* (Brighton, Harvester Wheatsheaf, 1991).

⁸ Annemarie Turnbull, 'Learning Her Womanly Work: The Elementary School Curriculum 1870-1914', in Hunt, *Lessons for Life*, 83-100.

⁹ Examples include: Ida Freund, 'Domestic Science – A Protest', *The Englishwoman* 10, no.29 (1911): 147-63; idem, 'A Degree Standard in Home Science', *Common Cause* 3, no.151 (1912): 795-797.

¹⁰ For Freund, see Marelene and Geoffrey Rayner-Canham, *Chemistry Was Their Life: Pioneering British Women Chemists, 1880-1949* (London: Imperial College Press, 2008), 43, 226-8.

¹¹ Blakestad, *KCHSS*, 3-7.

the USA,¹² Canada¹³ and Australia¹⁴ emphasises the history and agency of women professors and their collective attempts through household science to establish a level of status, prestige, expertise and authority within the academy and to engage in newly developing disciplines.¹⁵ Tanya Fitzgerald points to the paradox that home science,¹⁶ while forming part of the extension of women's higher education and employment, at the same time, legitimated traditional gender relations by separating women into sex differentiated classrooms in which they received a university education but within a protected space.¹⁷

¹² Sarah Stage and Virginia Bramble Vincenti, *Rethinking Home Economics: Women and the History of a Profession* (Ithaca; London: Cornell University, 1997); Maresi Nerad, *The Academic Kitchen: A Social History of Gender Stratification at the University of California* (Berkeley, New York: SUNY, 1999).

¹³ Ruby Heap, 'From the Science of Housekeeping to the Science of Nutrition: Pioneers in Canadian Nutrition and Dietetics at the University of Toronto's Faculty of Household Science 1900-1950', in *Challenging Professions: Historical and Contemporary Perspectives on Women's Professional Work*, ed. Elizabeth M. Smyth (Toronto: University of Toronto Press, 1999), 141-170.

¹⁴ Tanya Fitzgerald and Jenny Collins, *Historical Portraits of Women Home Scientists: the University of New Zealand 1911-1947* (Amherst New York: Cambria Press, 2011); Jenny Collins, 'Beyond the Domestic Sphere? A Home Science Education at the University of New Zealand, 1911-1936', *Journal of Educational Administration and History*, 41, no.2 (2009): 115-130; Tanya Fitzgerald, 'Academic Housework? Women Professors at the University of New Zealand 1911-1961', *New Zealand Journal of Educational Studies* 42, no.1/2 (2007): 115-127.

¹⁵ This phrasing draws on Tanya Fitzgerald, *Outsiders or Equals? Women Professors at the University of New Zealand, 1911-1961*, New York: Peter Lang, 2008), 7.

¹⁶ The range of terminology includes home economics, home science, and household science. From here onwards household science is used for consistency.

¹⁷ Fitzgerald, *Outsiders or Equals*, 14, 33.

In her reassessment of the KCHSS household science course, Blakestad examines the origins of the 'household science' concept in the social, intellectual and transatlantic contexts within which it was conceived, considers the household science course from a disciplinary standpoint, and charts the increasing proportion of KCHSS students taking up work in the new applied science fields.

This article complements Blakestad's vignettes of KCHSS students who went into the new applied science fields by focusing on how Winifred's KCHSS household science degree inflected her life and work as an 'ordinary' teacher, whose career spanned the spaces of elementary as well as secondary schooling and teacher education. The article has a double aim: first, to examine how disciplinary knowledge around the science of nutrition in the inter-war curriculum of KCHSS was deployed not only in newly-opening spaces of laboratories but also within women's customary spaces of school teaching; and second, to explore how the focus on science in the KCHSS household science degree played out alongside the stress on technical proficiency in craft skills that characterised much domestic subjects teaching.

The first part of the article traces the place of science in Winifred's school education and her induction into science during her studies at KCHSS and then into enhanced levels of technical craft expertise during teacher training at the Manchester College of Domestic Economy. The second part explores how aspects of science that she encountered as a student at KCHSS and of technical craft skill enhanced at the Manchester College of Domestic Economy threaded through her life and career as a teacher. The article begins by discussing the sources on which the account draws.

Family stories- professional stories

The article draws on Winifred's documentary archive,¹⁸ which includes typed 'family books', handwritten loose sheets of paper organised more thematically, diaries, and testimonials from her

¹⁸ Currently conserved by Bridget Egan.

teaching posts. We situate all of these sources as 'documents of life' - the 'everyday, representational, written verbal, visual, present, past and future texts' that are significant in 'organizing and shaping lives, and in which people are active, competent interpreters and theorists of their own lives and those of other people'.¹⁹ Written between 1977 and her death in 2007, Winifred's family books are genealogies for her grandchildren, informed with memories shared by family members and illustrated with family photographs. Here, she also aimed to correct inaccuracies around the state of the nation's nutrition on the 'home front' during World War 2, which she discussed with 'other older people'.²⁰ In the handwritten loose sheets she completed after the 'family books', Winifred aimed 'to give ... a picture of the way the lives of common people in this country changed in living memory'.²¹ Here, she repeated passages verbatim from the family books and deployed previously rehearsed narratives. These practices illustrate processes of 'composure' in which individuals construct narratives about themselves which strive to achieve an 'orientation of the self within the social relations of the world', producing a sense of self with which the narrator can live and through which theorists maintain coherence in a life-story is achieved.²² Processes of composure in narratives impact on the shape of documents of life, which in turn interact with the

¹⁹ Liz Stanley, 'Introduction: Documents of Life and Critical Humanism in a Narrative and Biographical Frame', in *Documents of Life Revisited: Narrative and Biographical Methodology for a 21st Century Critical Humanism*, ed. Liz Stanley (Farnham: Ashgate, 2013), 1-13, here, 4.

²⁰ Family Book (FamBook). There are no page numbers.

²¹ Loose Sheets (LS) 'Events'.

²² Penny Summerfield, 'Dis/composing the Subject: Intersubjectivities in Oral History', in *Feminism and Autobiography: Texts, Theories, Methods*, eds, Tess Cosslett, Celia Lury and Penny Summerfield (London: Routledge, 2002), 91-106, here 91-92.

possibilities inherent in the research process, and so the research findings and 'outputs'.²³ Winifred's diaries chart visits to family and friends and mark family holidays. The lists of meals Winifred was served on such occasions exemplify the importance of nutrition as a key theme within the frameworks through which Winifred constructed a self.²⁴

Winifred's documents of life are also 'family stories' that interweave private lives and public stories and illustrate how public and professional narratives are dependent on being heard and retold in everyday life.²⁵ They connect mothers, daughters, family and friends in processes that entangle researchers who are also embedded in these networks in 'the nexus of their possible meanings'.²⁶ Headteachers' testimonials attest to the views of those in authority on her teaching of domestic science and of general science in a range of educational institutions across a career that, as feminist researchers, we understand as 'a progression through adult life that includes time spent in and out of the workplace',²⁷ but which Winifred understood in terms of qualifications, expertise, professional accomplishments and the public self.²⁸ Benefitting from the ending of the marriage bar

²³ Maria Tamboukou, *Sewing, Fighting and Writing: Radical Practices in Work, Politics and Culture* (London, Rowman & Littlefield), 8; Stanley, 'Introduction: Documents of Life'.

²⁴ Marie-Françoise Chanfrault-Duchet, 'Textualisation of the Self and Gender Identity in the Life-Story', in Cosslett, Lury and Summerfield, *Feminism and Autobiography*, 61-73, here 68.

²⁵ Lynn Jamieson, *Intimacy: Personal Relationships in Modern Societies* (Cambridge, Wiley, 1998), 158-9.

²⁶ Tamboukou, *Sewing, Fighting, Writing*, 37.

²⁷ Stephanie Spencer, *Gender, Work and Education in Britain in the 1950s* (Basingstoke: Palgrave Macmillan), 4.

²⁸ For researchers' and narrators' differing interpretive frames, see Katherine Borland, '"That's Not What I Said": Interpretive Conflict in Oral Narrative Research', in *Women's Words: The Feminist Practice of Oral History*, eds, Sherna B. Gluck and Daphne Patai (London: Routledge, 1991), 63-75.

with the 1944 Education Act, Winifred noted, when writing as a married teacher with her own children:²⁹ ‘of course I was no longer concerned with a career’.³⁰

‘In the top stream’³¹: An Inter-war schooling in Science

Enrolled in the junior department of Altrincham County High School for Girls’ in 1923 as a fee-paying pupil after the family’s move from Ireland, Winifred transferred to the senior school ‘seamlessly aged 11 without further examination’. Here, Winifred’s peers included the ‘scholarship girls’ whom she viewed as clever, but who, with only one exception, did not stay into the Sixth Form or like Winifred go to University.³² Winifred went ‘up the school without trouble, not very clever but always in the top stream³³ and enjoying it’.³⁴

²⁹ Winifred married in 1945 and gave birth to a daughter (one of the co-authors) in 1946 and to a son in 1948.

³⁰ FamBook.

³¹ Ibid.

³² LS ‘Education’.

³³ Pupils in secondary education in England at this time (in schools with a sufficient intake of pupils) might be ‘streamed’ (i.e.separated) generally into classes (but sometimes also into groups) according to perceived academic ability. The parallel classes might be labelled ‘A’, ‘B’, or ‘C’ streams, with ‘A’ being the most academic. The curriculum varied between streamed classes or groups: pupils who were deemed able enough to achieve university entrance took Latin (a requirement for university entrance until the mid-1960s), additional languages, and possibly chemistry and physics, while pupils in the ‘lower’ streams might be offered craft subjects, which for girls often included domestic subjects.

³⁴ FamBook.

By the end of the 1920s, class dynamics inflecting debates around domestic and scientific subjects resulted in physics and chemistry being seen as appropriate for the 'bright' minority of schoolgirls, with botany, biology and domestic subjects considered suitable for the rest of the schoolgirl population.³⁵ Winifred took the School Certificate examination in 1930 and then maths, French, zoology, and chemistry in the sixth form. School Certificate required a pass in five subjects, including compulsory English, maths and French and a slightly different combination to 'count' for matriculation, which had been introduced to identify students for University entrance. In 1929, the Board of Education widened the scope of subjects that counted for School Certificate, with a knock on effect on matriculation. In 1930, the year Winifred took School Certificate, this resulted in six of the eight examination boards widening the scope of subjects counting for the examination of what was called Group 1V, which included cookery and needlework along with subjects like music, art, and carpentry.³⁶ While Winifred's school was technically able to enter pupils for School Certificate in

³⁵ Manthorpe, 'Science or Domestic Science?'

³⁶ Subjects for the School Certificate Examination were divided into four groups: Group 1: scripture, English, geography, history; Group 11: Latin, Greek and modern languages; Group 111: mathematics and sciences; Group IV: drawing, music and a number of other subjects which varied between examination boards but by 1922 could include, bookkeeping, shorthand, mapwork, economics, housecraft, needlework, mensuration and surveying, and hygiene. Candidates had to offer a minimum of five subjects from the four groups but they would only gain the School Certificate if they passed in five subjects taken from Groups 1, 11, and 111. Group IV subjects did not count towards the Certificate. To matriculate (which provided the minimum examination requirements necessary for university entrance) they had to pass in at least one subject in each of Groups 1, 11 and 111, so pupils tended to try for matriculation rather than simply try to gain the School Certificate. Felicity Hunt tracks the fierce debate that ensued, led by women teachers, about the lack of parity of Group 1V subjects in School Certificate. Although the debate was to continue for a further 10 years, in 1929 it was agreed that the School Certificate could comprise a pass in three subjects (one each from Groups 1, 11, and

cooking and needlework and possessed facilities for teaching domestic science,³⁷ it does not appear to have entered future University pupils for examination in these subjects in 1930.

As an 'A' stream girl taking Latin ("B" girls took biology and soon dropped Latin')³⁸ Winifred was entered for the Joint Matriculation Board's (JMB) School Certificate and matriculation and passed the compulsory English, maths, and French plus geography, history and biology. She noted: 'I failed in Geography and got a distinction in Biology, then did Maths, French and Zoology in the VIth form. I also took up Chemistry as it seemed a good idea (which it was)'.³⁹ Winifred's JMB matriculation was acceptable for entry to northern universities⁴⁰ but did not provide entry to the University of London. In addition, KCHSS where Winifred was headed 'demanded chemistry', so Winifred took the London matriculation in 1936 as an external candidate.⁴¹ She noted:

Joint Matriculation Board was not recognised by London so, when I went to London University, I had to take London Matriculation – I was taking Higher School Certificate⁴² at

111) and two subjects from Group IV. For School Certificate, Group IV subjects and matriculation see Hunt, *Gender and Policy*, 82-93.

³⁷ Myra Kendrick, *A Short History of Altrincham County Grammar School for Girls 1910 to 1974* (Ashton-Under-Lyne: AGGS Old Girls' Society, 1976), 8.

³⁸ LS Family's Education.

³⁹ FamBook. Presumably Winifred deemed it a 'good thing' because the household science syllabus at KCHSS included a substantial amount of chemistry.

⁴⁰ The JMB (operating from 1903) covered the requirements of the universities of Manchester, Liverpool, Leeds, Sheffield and Birmingham.

⁴¹ LS 'Education'.

⁴² School Certificate was generally taken at 16 following five years of general education and Higher School Certificate two years later after more specialised study. Josephine Kamm, *Indicative Past: A Hundred Years of the Girls' Day School Trust* (London: George Allen and Unwin, 1971), 128.

the same time so was all right for Maths, Biology, Chemistry, French but had to do English on my own.⁴³

The choice to enter KCHSS had not been Winifred's. Winifred came from a family that had included teachers. Her aunt Jeannie, with whom Winifred would lodge in Wembley while studying at KCHSS,⁴⁴ had been a monitor in the Magherascouse National School, where her father was the 'Master'. Prior to her marriage and move to England, Jeannie attended training college in Dublin, returning as the 'mistress' to teach at the Magherascouse School, where Winifred noted she 'taught juniors (5-11 yr. olds), [...] took all the girls for needlework and demonstrated cookery (no practical work)'. The decision that Winifred would train to teach domestic science was taken by her mother, and the decision that she would apply to KCHSS for entry by Miss Howes Smith,⁴⁵ headmistress of Altrincham County High School for Girls:

My mother had decided that I would teach Domestic Science,⁴⁶ I had been awarded the Cheshire County Domestic Science Scholarship, Miss Howes-Smith decided that I should go to Kings College, so she set about getting the award raised to a University scholarship and got it raised from £40 to £75 a year, so I went to the University. There were no grants in

⁴³ LS 'Events'.

⁴⁴ For women students living with family members to save money see Carol Dyhouse, 'Signing the Pledge? Women's Investment in University Education and Teacher Training Before 1939', *History of Education* 26, no.2 (1997): 207-223, here 214.

⁴⁵ Mary Howes Smith, a history graduate of Newnham College, Cambridge, was formerly history and English governess to HRH Princess Mary, later the Princess Royal, see: Kendrick, *Altrincham County Grammar School for Girls*, 1-13.

⁴⁶ FamBook.

those days and Gordon⁴⁷ was already at Manchester University, so there was no question of my parents being able to afford two lots of fees. Mother would have insisted that girls should have equal opportunities with boys, but it took another generation to put that into practice.⁴⁸

“When we had graduated [from KCHSS] we knew far more science than the [Manchester College of Domestic Economy] staff!”⁴⁹

The KCHSS household science syllabus had been constructed around a core of sciences relevant to the domestic sphere – chemistry, biology, physiology, bacteriology and hygiene. For Winifred, academic gowns and lab coats marked the shift from school to KCHSS and to the ‘serious’ study of science:

A costume (coat and skirt) from a guinea shop and an old costume of my mother’s were the things I wore every day. As we wore academic gowns for lectures and overalls in the laboratories it didn’t really matter much what we wore. In the lab, we wore different coloured overalls each year (so that the lecturers and demonstrators could recognise us I suppose).⁵⁰

The label ‘household science’ had signalled a shift from a manual and craft orientation (for lower middle class and working class woman and girls) to a more professional and scientific orientation for

⁴⁷ Winifred was the second of five children (3 boys and 2 girls). Gordon was her elder brother. Her younger sister, also university educated, became a doctor.

⁴⁸ FamBook.

⁴⁹ Ibid.

⁵⁰ Ibid.

(female) university students.⁵¹ By the time Winifred joined KCHSS in 1933, the three-year degree syllabus had undergone restructuring to augment its science content and to divide the third year according to career specialisations in teaching, household and institutional administration, and social work.⁵² Winifred recorded:

At “Kings” we took a lot of science subjects, Biology, Chemistry, Physics and Economic History in the first year, Economic Biology, Organic Chemistry, Physiology and Household Science and Economics in the second year and Applied Chemistry, Physiology, Household Science and Bacteriology in the third year.⁵³

The 1932 edition of *Applied Chemistry: A Practical Handbook for Students of Household Science and Public Health, Volume 2 Foods*,⁵⁴ written by two KCHSS College lecturers,⁵⁵ and in use

⁵¹ Fitzgerald, *Outsiders or Equals*, 50. The use of term ‘household science’ in relation to the establishment of the Kings College course in 1908 linked with Edwardian concerns about physical aspects of social conditions, including physical deterioration and infant mortality. A catalyst for ‘household science’ was Alice Ravenhill’s 1901 visit to the USA and Canada to report for the Board of Education on the American Home Economics movement. The adoption of the term ‘household science’ in England differentiated it from school level ‘domestic science’ and the professional courses training teachers and highlighted the link with women’s changing role in social reform. Blakestad, *KCHSS*, chapter 2.

⁵² Blakestad, *KCHSS*, 176.

⁵³ FamBook. See also Nancy L Blakestad, ‘Kings College of Household and Social Science and the Origins of Dietetics Education’, in *Nutrition in Britain: Science, Scientists and Politics in the Twentieth Century*, ed. David Smith (London: Routledge, 2013), 75-98, here 76.

⁵⁴ Kenneth Tinkler and Helen Masters, *Applied Chemistry: A Practical Handbook for Students of Household Science and Public Health. Volume 2 Foods* (London: The Technical Press, 1926) was written for the diploma in household science which was replaced by the BSc (HSS).

during Winifred's time at KCHSS, illustrates in some detail the approach to the applied science of food and the standards of scientific work into which Winifred was inducted during her BSc (HSS). In *Applied Chemistry*, Tinkler and Masters note that in the first year of the course the work in inorganic chemistry was 'practically the same as that of an ordinary Intermediate BSc course'. In the second year, where the focus was on organic and physical chemistry in order to provide a basis for the instruction in applied chemistry and physiology, the students also gained further experience of quantitative methods. For students in their third year of study, Tinkler and Masters noted that it had been 'found impossible to make use of any one existing textbook for either the theoretical or practical work' and that:

In some cases the experiments deal more particularly with problems relating to household matters, and are not performed in the Chemical Laboratory, but form part of the work in the Kitchen Laboratory. This work is carried out in conjunction with the work in Applied Chemistry to meet the special needs of students of Household Science.⁵⁶

Applied Chemistry suggests that Winifred's induction into the applied science of food within household science was framed within the 'scientism' of the early twentieth century, which tended to regard explanations arrived at through scientific enquiry as absolute, in contrast to the Popperian notion that the key application of scientific process is to seek to disprove theory and that scientific explanations of the 'real world' are necessary provisional and can only be held to be true until new

⁵⁵ Tinkler joined KCHSS in 1915 as reader in chemistry. Masters, who held a BSc Applied Science and a postgraduate diploma in household science, moved from the post of demonstrator in physics at Cheltenham Ladies College (1910-11) to become demonstrator in applied chemistry at KCHSS. She was head of domestic science at Battersea Polytechnic at the point when the text was published. Agnes Jackson author of a text on laundrywork (see Rayner-Canham, *Chemistry Was Their Life*, 107-109) would have taught Winifred.

⁵⁶ Tinkler and Masters, *Applied Chemistry (Food)*, vi.

observations supersede them.⁵⁷ *Applied Chemistry* is didactic in style. Apparatus is illustrated with photographs and cross-section line drawings. Photographs of food structures are accompanied by explanation, and in a number of instances with formulae demonstrating the chemical process involved, plus experiments for the student to conduct. For example, the section 'Formation of Osazones' (a class of carbohydrate derivatives formed when sugars react with phenylhydrazine) begins with an explanation of the formation of osazones and is followed by two pages of chemical formulae that outline the stages of the chemical reaction and the chemical formulae for the formation of the same osazone from glucose and fructose respectively. After this come 'photomicrographs of osazones' at 240 magnification and the text of an 'experiment' entitled, 'To Prepare an Osazone.'⁵⁸ This is no journey of discovery, however, for students are provided with the results of the 'experiment' from the outset. For the student the 'experiment' represents a technical exercise in getting the 'right answer' by matching their 'findings' with the text and the plate illustrating the photomicrographs of osazones. Elsewhere the text includes explanation of the chemistry underlying food production, as in the section entitled, 'Stages or Degrees of Sugar Boiling. This explains the process in detail, asks students to 'experiment' with this process themselves and then to illustrate the process used in the production of two different types of sweets (barley sugar and fondant).⁵⁹

During the interwar period, KCHSS developed a strong emphasis on applied nutrition as a branch of household science. This development was spearheaded by Vernon Henry Mottram,

⁵⁷ See for example, Hilary Putnam, 'The "Corroboration" of Theories', in *Arguing About Science*, eds, Alexander Bird and James Ladyman (London: Routledge, 2013), 228-242.

⁵⁸ Tinkler and Masters, *Applied Chemistry (Food)*, 68-71.

⁵⁹ *Ibid.*, 233-234.

professor of Physiology at KCHSS, 1920-1944.⁶⁰ KCHSS ran a certificate in dietetics during Winifred's time as a student and a postgraduate diploma in dietetics was established in 1936, the year Winifred graduated. The postgraduate diploma involved two terms of theoretical work and six months of practical work in diet and general hospital kitchens. There were examinations in chemistry and the physiology of nutrition, the principles of dietetics, diet and disease, and large-scale catering, together with a six-hour practical exam in cookery and the construction of special diets. The postgraduate diploma in dietetics built on the experience of the certificate course, which had run as a term-long evening course for nurses, domestic science students, social welfare workers and caterers. As Blakestad notes, the certificate course had been established in the face of the growing competition from hospitals and domestic science colleges, many of which were organising their own dietetics courses. This included short courses set up at domestic science colleges to train women for positions in school meal services and institutional catering.⁶¹ Winifred herself would lecture on this type of course between 1944 and 1946 at Liverpool's F.L. Calder College of Domestic Science.

While dietetics and nutrition would play a role throughout Winifred's career, it was the comparatively new science of bacteriology that fascinated her when she came to graduate. Closely linked to food production and food conservation,⁶² bacteriology had made laboratories central to medical and public health hygiene practice by shifting to the definition and control of causes and away from defining diseases by their circumstances, symptoms and pathologies.⁶³ Winifred was

⁶⁰ David F. Smith, 'Mottram, Vernon Henry (1882-1978)', *Oxford Dictionary of National Biography*, Oxford University Press 2004 (<http://www.oxforddnb.com/view/article/31479> [accessed 7 Oct 2015]).

⁶¹ Blakestad, 'Dietetics Education', 87.

⁶² W.T. Sedgwick, 'The Genesis of a New Science – Bacteriology', *Journal of Bacteriology* 1 (1916): 1-14, here 4.

⁶³ Andrew Mendelsohn, 'Bacteriology and Microbiology', in *The Oxford Companion to the History of Modern Science*, ed. John L. Heibron (Oxford: Oxford University Press, 2003), 76-78.

fascinated by bacteriology, which she wished to study on completion of her degree; but this was not to be.⁶⁴

Whether Winfred went on to teacher training immediately on completing her degree as a result of an obligation to teach attached to her Cheshire Domestic Science scholarship remains a matter of conjecture. After 1910 the Board of Education's preferred pattern for intending teachers was a three-year academic course, followed by one year of teacher training. Under the Board's scheme, students who 'pledged' their intention to teach for five years upon graduation were eligible for grant support for four years, including the provision of tuition fees and a maintenance allowance in return for finance to access higher education (followed by teacher training). Some local authority awards and major county scholarships were also conditional upon a commitment to teach for five years after graduation, and often carried provisions for repayment of grants in the case of failing to meet these obligations.⁶⁵ Whatever the reason, Winifred noted:

⁶⁴ As Blakestad notes, the most obvious career path for household science graduates when the course first opened was teaching, with 45.6% of graduates between 1910 and 1919 becoming teachers, with 15.2% of graduates going into laboratory work, 13% into domestic management, 2.2% into business and industry, 2.2% into war-related employment, 6.5% into government work, and 4.3% into administrative posts. As numbers of KCHSS graduates entering laboratories focused on food-related research and dietetics-related occupations continued to grow, the numbers progressing to teaching from KCHSS had declined by the time Winifred graduated in 1936 and were to drop to 18.6% by the end of the 1940s. Blakestad, *KCHSS*, 2, 8. 188, 194, 'Appendix B: Numbers and Percentages of Students' First Jobs by Job Type, 1910-1949 (Database Sample)'.

⁶⁵ Dyhouse, 'Signing the Pledge?':

I only wanted to go on studying and most passionately wished to take a second degree in Bacteriology. This, my parents would not consider, so, with no argument ... I went to the Manchester College of Domestic Science and took a teaching certificate.⁶⁶

The shift at KCHSS from technical courses of a manual and craft orientation around domestic subjects to a more professional and scientific orientation for (female) university students⁶⁷ resulted in KCHSS students being less well prepared in the technical processes required of intending domestic subjects teachers.⁶⁸ At KCHSS Winifred had followed the summer vacation courses established for intending teachers:

Summer vacation courses were – food preservation – in the college – jam, chutney etc. and bottling fruit and vegetables – you may find it hard to believe but we bottled mixed vegetables in glass (Kilner) jars (in brine I suppose) but vegetables prepared and trimmed so we wasted a lot of root vegetables by cutting slices into neat shapes with a pastry cutter and then arranging them in layers or other patterns – (drawing) or whatever – you only had to lift the jar for the pattern to slip and so you had to begin again and root vegetables had to be sterilised at pressure – I never did it again, but the shelves of vegetables looked nice.⁶⁹

Qualifications in needlework were particularly important for intending teachers and Winifred had also followed the vacation course KCHSS negotiated with the Royal College of Needlework:

At the end of the Summer Term of the second year I had to do an intensive Needlework course at the Royal School of Needlework. There I did the finest sewing I ever did. Lots of

⁶⁶ FamBook.

⁶⁷ Fitzgerald, *Outsiders or Equals*, 50.

⁶⁸ Blakestad, *KCHSS*, 281.

⁶⁹ LS 'Graduation/London'.

specimens of course, a smocked child's dress, by hand, a child's dress by machine, and a small petticoat illustrating a lot of processes,⁷⁰ all done ... by hand, and with No.12 sewing needle, 200 cotton on fine lawn. ... While I was on that course I saw the most beautiful needlework being done by the students and apprentices that I have ever seen, or am likely ever to see.⁷¹

The year Winifred graduated (1936) KCHSS also made arrangements with the Manchester, Liverpool, Cardiff and Gloucester training colleges of domestic science for a special course combining pedagogy and extra craft work.⁷² Graduating that year as one of 35 students awarded BSc (HSS),⁷³ Winifred noted of her preparation at KCHSS:

The following September I started on a one year course at the Manchester College of Domestic Science to take a teaching certificate and to improve the standard of practical work. At "Kings" we took a lot of science subjects when we had graduated we knew far more science than the ordinary Domestic Science students, in fact we knew more than the staff! But we had not reached the same standard in practical work, so we set about improving our practical work in Cookery and Laundry and learning how to teach!⁷⁴

Founded in 1880, the Manchester College of Domestic Science was run under the auspices of the Manchester Education Committee and built on a long tradition of offering lectures and

⁷⁰ FamBook.

⁷¹ FamBook.

⁷² Blakestad, *KCHSS*, 283.

⁷³ *Ibid.*, 'Appendix C Total KCHSS Degree and Diploma Students', 405.

⁷⁴ FamBook.

demonstrations in cookery and other subjects across Greater Manchester.⁷⁵ In an environment that differed from the highly scientific approach of KCHSS, one of the six KCHSS students dropped out within a week.⁷⁶ Across her teaching career, Winifred's testimonials speak of a well-organised teacher whose pupils enjoyed her lessons and worked purposefully; but Winifred found teaching practice uncongenial:

There is absolutely nothing which has happened to me that I hated so much as teaching practice during that year. I don't know why that should have been so, I was a good cook, laundered to near perfection, got very good reports, prepared my lessons thoroughly and really did well, but I HATED teaching practice and am so glad to be able to tell you that the real thing was never so bad.⁷⁷

'[A] capable teacher ... who ... closely linked the teaching of Housecraft with Science'⁷⁸

Blakestad notes that it was usual for KCHSS graduates taking up teaching to work in secondary schools and most KCHSS graduates going into teaching did so as science or domestic subjects mistresses in secondary and technical schools, a handful taught both science and domestic subjects, while a number became science mistresses for domestic subject training colleges.⁷⁹ Winifred was unusual for a KCHSS graduate in working in the first instance in the state elementary sector. She was appointed to Trafalgar Square Cookery Centre in Stepney's Mile End Road in the East End of London, at a time when the London County Council were experiencing difficulties in recruiting

⁷⁵ Vanessa Heggie, 'Domestic and Domesticating Education in the Late Victorian City', *History of Education* 40, no.3 (2011): 273-290.

⁷⁶ FamBook.

⁷⁷ FamBook.

⁷⁸ Testimonial from J.Mellor.

⁷⁹ Blakestad, *KCHSS*, 193.

teachers to cookery and laundry centres due to the centres' old premises and inadequate facilities.⁸⁰ As Winifred and the friend with whom she shared lodgings discovered, it was indeed unusual for graduates to teach in London's domestic economy centres:

When Kath and I got our first salaries from the L.C.C we realised that we were not getting our graduate allowance so we presented ourselves to a Mr Tickby of the education department, who told us that there was no record of graduates teaching Domestic Science – we pointed out that he knew we were graduates when we were appointed – the result was a year later we got the graduate allowance.⁸¹

Although the National Union of Women Teachers continued to argue that there should be 'equal preparation for home life as between boys and girls by the giving of instruction to boys in the simple elements of domestic subjects ... such as cookery',⁸² and boys living in seaports were taught cookery,⁸³ cookery lessons remained overwhelmingly the preserve of women and girls.⁸⁴ Girls aged 11-14 were sent to the Trafalgar Square cookery centre from several surrounding schools.⁸⁵

I started teaching in London, not appointed to a school but to the authority, and was sent to a "Centre" in Stepney to teach Cookery. A "Centre" was an old way of managing the

⁸⁰ Sarah King, *Girls' Vocational Training Schools in London: A Study of the Inter-war Years*, Unpublished PhD thesis, University of Greenwich (1994), 125.

⁸¹ LS 'Graduation/London'.

⁸² Sarah King, 'Feminists in Teaching: The National Union of Women Teachers, 1920-1945', in *Women Who Taught: Perspectives on the History of Women and Teaching*, eds, Alison Prentice and Marjorie Theobald (Toronto: University of Toronto Press), 192-201, here 194.

⁸³ Dena Attar, *Wasting Girls' Time: The History and Politics of Home Economics* (London, Virago, 1990), 114-35.

⁸⁴ Blakestad, 'Dietetics Education'; Heap, 'From the Science of Housekeeping'.

⁸⁵ Testimonial from Mary King, Acting Head Mistress, Trafalgar Square School (nd).

teaching of practical subjects, the room was equipped with the necessary tools, then classes from different schools were sent to the Centre, one class all morning and one all afternoon, I had sixteen girls at a time, so as far as running the class was concerned life was not too complicated.⁸⁶

Cookery lessons during the inter-war period were required to cover their costs, which meant that the food the pupils prepared had to be attractive enough (and cheap enough) for their parents to wish to pay for it. In her first year Winifred became efficient in account keeping: 'recording, keeping order, "dealing with parents"'.⁸⁷ After the cookery centre and a term in a laundry centre she was deployed in a mixed [housewifery] centre,⁸⁸ of the type favoured in the 1926 Hadow Report.⁸⁹ In 1937, when Winifred took up employment, housewifery centres represented LCC policy on the further development of domestic subjects. The aim was to concentrate on homemaking as a unified 'art' rather than on the separate components of cookery, laundry work and housewifery. In the same year, LCC inspector, Miss Bright, stressed the direction of future development:

There is now a growing conviction that home making cannot be taught with reality in the watertight compartments of cookery, laundry work and housewifery. In order that housecraft may be seen by the child as a unified activity, it is essential the various home occupations should be taught in one room or department, fully equipped for the purpose.⁹⁰

⁸⁶ FamBook.

⁸⁷ LS 'Evacuation/Sale/Liverpool'.

⁸⁸ FamBook.

⁸⁹ Board of Education, Consultative Committee, *The Education of the Adolescent* (London: HMSO, 1926), 235.

⁹⁰ Miss Bright, 'The Teaching of Housecraft, Appendix to the Report of the LCC, 1937', cited in King, *Vocational Training Schools*, 100.

But Winifred noted that the Stepney housewifery centre, with its bathroom, sitting room, bed sitting room and kitchen, was at variance with how Stepney families lived:

Each class had a “housekeeper” whose job it was to have a hot bath, wash her hair and clean up, make a tray of coffee and biscuits for “break” and invite head teacher, form teacher, me, mother, whoever – to a nice peaceful day. You have to understand that nobody that I taught in Stepney had a bathroom.⁹¹

I was showing a class how to unblock a sink when I heard a mutter “Alright if you’ve got a sink!” At lunch time and after school I went to see the head mistress thinking she might not know! When I found that 1) the houses were let by the room ... 2) a tap in the yard sufficed for the house 3) water closets – a block of 4 for 4 houses. The girl who set me off was from a family of three generations in two attic rooms.⁹²

The Board of Education’s *Suggestions for Teachers* for 1937 stressed the attainment of practical proficiency in domestic subjects: ‘by repetition of processes until good performance has become so much a matter of habit as to be almost automatic’.⁹³ This approach to technical craft training was a far cry from the scientific underpinnings of Winifred’s time at KCHSS but chimed with notions of technical proficiency in fashioning the 1930s housewife.⁹⁴ Winifred’s testimonial from Trafalgar Square’ headmistress speaks of Winifred as a hard-working, capable teacher who set high standards for herself and her pupils. Despite her inexperience she had faced ‘her somewhat difficult

⁹¹ LS ‘Graduation/London’.

⁹² Ibid.

⁹³ Board of Education, *Suggestions for the Consideration of Teachers and Others Concerned in the Work of Public Elementary Schools* (London: HMSO, 1937), 298.

⁹⁴ See: Judy Giles, *Women, Identity and Private Life in Britain, 1900–50* (New York, Palgrave Macmillan, 1995).

task with intelligence and determination’ and had taken ‘care and interest in teaching the girls, some of whom were poor, so that they had enjoyed their lessons with her’.⁹⁵

Working at Trafalgar Square with impoverished families, many of whom were too poor to buy the right kind of food necessary to maintain good health,⁹⁶ provided experience that would be relevant when teaching food values in Newbury, where she was evacuated with Trafalgar Square School, and when training teachers in dietetics at F.L.Calder College in Liverpool during and immediately after the Second World War. Winifred’s work at Newbury and Calder College demonstrates the legacy of the strong emphasis on applied nutrition as a branch of household science that had developed at KCHSS under Henry Vernon Mottram. Mottram linked his socialist sympathies with an interest in low cost alternative foods for working-class budgets and had drafted the memoranda on nutrition issued by the Ministry of Health in the early 1930s.⁹⁷ Winifred would keep one of Mottram’s books on nutrition in her home throughout her life.

Managing rations during World War Two took up considerable space in Winifred’s auto/biographical accounts of herself as teacher and efficient household manager:

There were regular broadcasts, giving advice and information on catering and feeding the family. Lord Woolton – food minister, gave a recipe for “Woolton tea” – I don’t remember the recipe but both my mother and I were ahead of him in managing on our rations..... and, it is a fact that nutritionally, the population was better fed from a nutritional point of view.⁹⁸

⁹⁵ Testimonial Mary King.

⁹⁶ Margery Spring Rice, *Working Class Wives* (London Penguin 1939), 155.

⁹⁷ Blakestad, ‘Dietetics Education’, 84.

⁹⁸ FamBook.

Of course we all used all our rations and there were no “junk” foods on sale to upset the balance.⁹⁹

Winifred built on knowledge of food values developed at KCHSS¹⁰⁰ when she responded to a request from the Ministry of Food and the Board of Education during evacuation to give food demonstrations to the mothers of children at the Newbury Girls’ Modern School and to local Women’s Institute meetings:¹⁰¹

For the summer term – I was teaching juniors and getting fidgety so was happy to give a few classes to women on how to manage the rations.¹⁰² ... on the rationing, food value of food etc. which of course, I willingly did.¹⁰³

Subsequently teaching at Sale Girls’ High School from 1940, (and later at Liverpool’s F.L. Calder College), Winifred was adept at managing rationing when teaching, illustrating porous boundaries in the management of her personal and professional life:

Teaching Cookery [at Sale] was a bit of a problem both the problem of ingredients and the fact that in an air-raid ... everyone had to go to AIR RAID SHELTERS (dug in the school playing

⁹⁹ Ibid.

¹⁰⁰ See Margaret McKillop, *Food Values - What They Are, and How to Calculate Them* (London: Routledge, 1922). For McKillop, a KCHSS science lecturer see Rayner-Canham, *Chemistry Was Their Life*, 105-107.

¹⁰¹ Testimonial Girls’ Modern School Newbury, 22 July 1940.

¹⁰² LS ‘Rations’.

¹⁰³ LS ‘Evacuation/Sale/Liverpool’.

field) – I cannot remember how I managed as 1) teachers had to accompany the class 2) what did I do if the ovens were in use?¹⁰⁴

At fruit bottling time we could swap our sweet ration for sugar – in fact our family did that all the time) so I was able to teach jam making and bottling fruit. Of course you can bottle fruit unsweetened but it takes far more sugar to make it palatable than by bottling in syrup.¹⁰⁵

Approached to join the Ministry of Food to supervise a chain of British Restaurants stretching from Crewe to Carlisle¹⁰⁶ (set up to help extend rations by providing two course meals at cost price),¹⁰⁷ Winifred was unable to take up the challenge because she needed to give a term's notice at Sale Girls' High School where she was preparing candidates for School Certificate in domestic science. For a number of years prior to Winifred's appointment, the school had not entered girls for domestic science at School Certificate but Winifred's 'excellent' discipline, 'lucid' explanations and 'sound' work, 'even with the less able girls even under difficult war conditions', had resulted in 'quite young children' achieving 'surprisingly good results'. The Headmistresses' testimonial states that she 'raised the standard of domestic subjects teaching at Sale, so that by 1942 Cookery was taken as a subject with very good results.'¹⁰⁸ Winifred noted of the request to run

¹⁰⁴ LS 'Graduation/London'.

¹⁰⁵ FamBook.

¹⁰⁶ LS 'Graduation/London'.

¹⁰⁷ LS 'Evacuation/Sale/Liverpool'.

¹⁰⁸ Testimonial from B.H.Morgan, Sale Girls' High School, 14 November 1943.

the British Restaurants: 'I was tempted but I was asked to give a week's notice and obviously I couldn't do that'.¹⁰⁹

In 1944 Winifred moved to Liverpool's City Technical School for Women / F.L. Calder College of Domestic Science to lecture on dietetics as well as cookery and housewifery and to train first year students in practical demonstrations prior to their practical teaching in schools.¹¹⁰ Mirroring Mottram's emphasis at KCHSS, Winifred described her main subject at Calder College as nutrition, while also noting that she taught practical cookery and laundry work.¹¹¹ Teaching at Calder College during the war was challenging. Not only was there rationing, but Liverpool was badly bombed and so were the College buildings.¹¹² At Liverpool, Winifred engaged with local schools and also with local works canteens in ways that resonated with the element on large-scale catering that formed part of KCHSS dietetics teaching:

I visited dozens of schools and a great many works canteens and had a real education to see how the rations were used in different canteens – all the same food but a good canteen manager did well, both with the rations and in training the workers. Sometimes the directors got preference – sometimes all got the same [food] and everyone in the kitchen could do everything so an absentee did not cause the problems that one might if the absentee only was trained to do one job! Stands to reason really but you could breathe the atmosphere.¹¹³

¹⁰⁹ LS 'Graduation/London'.

¹¹⁰ Testimonial from Miss D.M.P. Morley, Principal, F.W. Calder College of Domestic Science, 12 June 1952.

¹¹¹ FamBook.

¹¹² LS 'Evacuation/Sale/Liverpool'; see: Margaret E. Scott, *The History of F. L. Calder College of Domestic Science, 1875-1965* (Wetteren, Belgium: Universal Press, 1967), chapters 9 and 10.

¹¹³ LS 'Graduation/London'.

Marrying just after the war, Winifred continued to teach at Calder College until the birth of her daughter in 1946.

After a six-year career break focused on parenting, and conscious of the post-war shortage of teachers, Winifred returned to teaching in 1952, when she accepted a post at Wellington Secondary School for Girls, a secondary modern school of 650 pupils. Here, she taught classes of all ages and various ranges of ability. With 'excellent' discipline, 'up-to-date methods' and 'clear aims', the headmistress' testimonial reported that 'girls respond readily to the high standards ... in industry, order, and finish in all their work'. From 1955-1960, Winifred took charge of the school's housecraft department, comprising four full-time domestic science and two needlework teachers, in addition to managing the technical course, oversight of the housecraft house, and preparing girls with success for G.C.E domestic science. The headmistress noted that Winifred's 'initiative, and mature outlook' had brought about 'great improvements and provided satisfying activities for the girls'. Significantly, Winifred had not only 'closely linked the teaching of Housecraft with Science'. Her Wellington Road testimonial also describes her as 'a capable teacher of General Science'.¹¹⁴

As an 'army wife', 'no longer concerned with a career', Winifred continued to teach domestic science and housecraft until her retirement in 1974, moving schools as regularly as the Army posted her husband.¹¹⁵

Conclusion

While earlier feminist scholarship interpreted the rise of household science as a mechanism to institutionalise discrimination against women, revisionist accounts provide more nuanced

¹¹⁴ Manthorpe, 'Science or Domestic Science?', 213.

¹¹⁵ Bushey Meads School (1961), Cavendish School (Jan-July 1965), Wedmore School (1966), Bedminster Down School (1967-74).

interpretations of the paradoxes of household science as an academic field.¹¹⁶ These accounts point to ways in which the academic study of household science opened up, or professionalised, new fields for women. This article illustrates the ways in which the academic study of household science also played out in the life and career of a KCHSS graduate who became a teacher.

Winifred's 'documents of life' attest to how science and technical craft skills were differently emphasised during her education and teaching career in relation to her context. At the Manchester School of Cookery, she and the other KCHSS students knew more science than the staff as a result of their 'serious' study of science, but were less proficient in the practical elements of cookery and laundry work. Teaching at the centres attached to Trafalgar Square school, the balance shifted towards technical craft skill, exemplified by the Board of Education's *Suggestions for Teachers*, which stressed the 'attainment of practical proficiency in domestic subjects, by repetition of processes until good performance has become ... almost automatic'.¹¹⁷ Teaching nutrition and dietetics and training teachers at Liverpool's Calder College drew directly on Winifred's interest in nutrition that was a key feature at KCHSS; but she also supported technical crafts skills by preparing intending teachers in practical demonstration. At Wellington Road Secondary School for Girls, Winifred taught general science as a subject and her teaching of general science complemented the ways in which she applied scientific principles to the teaching of housecraft.

The emphasis on nutrition and food values developed at KCHSS as part of the new science of dietetics, ran as a thread through Winifred's teaching career. It is articulated in Winifred's accounts of her classes for mothers during evacuation and her teaching of dietetics at Calder College. We see the crossover between the public and the private, characteristic of 'documents of life', and of 'family stories' in her listing of food in her diaries, her pride as a manager of rations in her own home, and in

¹¹⁶ Fitzgerald and Collins, *Historical Portraits*, 51.

¹¹⁷ Board of Education, *Suggestions for Teachers*, 298.

managing rations while teaching during the war at Sale Girls' High School and at Calder College. In this slippage we see both continuity and change and the paradoxes associated with domestic subjects to which newer scholarship on household science attests: continuity in terms of how domestic subjects teaching had been framed in terms of knowledge and skills for the future wife and mother, and change in the focus on the 'scientific' aspects of the new 'science' of dietetics. Winifred's 'documents of life' attest to a story that is not just one of household science providing an avenue to open up new spaces for women's careers. Her story shows ways in which household science could weave into the everyday practice of a teacher whose academic education had stressed the importance of science and who had imbibed the ethos and practice of a new science like dietetics in educational spaces for women like KCHSS.